

CLAIMS

What is claimed is:

1. A method in a data processing system having a program with a plurality of threads having a plurality of states, the method comprising the steps of:

5 running the program and determining the state of each thread during a measuring period, wherein the measuring period comprises a plurality of time intervals;

receiving user input indicating a selected one of the plurality of states;

receiving user input indicating a selected one of the plurality of threads;

10 determining a portion of the measuring period during which the selected thread is in the selected state;

determining, during the portion of the measuring period, whether another thread other than the selected thread is in another state other than the selected state; and

15 when it is determined that the other thread is in the other state, determining an amount of time that the other thread is in the other state.

2. The method of claim 1, further comprising the step of calculating a percent of the portion of the measuring period that constitutes the amount of time that the other thread is in the other state.

3. The method of claim 1, further comprising the steps of:

determining, during the portion of the measuring period, whether the other thread is in the selected state;

when it is determined that the other thread is in the selected state, determining a second amount of time that the other thread is in the selected state; and

25 calculating a percent of the portion of the measuring period that constitutes the second amount of time that the other thread is in the selected state.

4. A method in a data processing system having a program with a plurality of threads having a plurality of states, wherein the program executes during a measuring period and the measuring period comprises a plurality of time intervals, the method comprising the steps of:

5 receiving user input indicating one of the plurality of states to anchor;
receiving user input indicating a selected one of the plurality of threads;
determining a portion of the measuring period during which the selected thread is
in the anchored state;
determining, during the portion of the measuring period, whether another thread
10 other than the selected thread is in another state other than the anchored
state; and
when it is determined that the other thread is in the other state, determining an
amount of time that the other thread is in the other state.

5. The method of claim 4, further comprising the step of calculating a
15 percent of the portion of the measuring period that constitutes the amount of time that the
other thread is in the other state.

6. The method of claim 4, further comprising the steps of:
determining, during the portion of the measuring period, whether the other thread
is in the anchored state;
20 when it is determined that the other thread is in the anchored state, determining a
second amount of time that the other thread is in the anchored state; and
calculating a percent of the portion of the measuring period that constitutes the
second amount of time that the other thread is in the anchored state.

7. A method in a data processing system having a program with a plurality of threads having a plurality of states, wherein the program executes during a measuring period and the measuring period comprises a plurality of time intervals, the method comprising the steps of:

- 5 receiving user input indicating a selected one of the plurality of states;
receiving user input indicating a selected one of the plurality of threads; and
determining a portion of the measuring period during which the selected thread is
in the selected state.

8. The method of claim 7, further comprising the steps of:

- 10 determining, during the portion of the measuring period, whether another thread
other than the selected thread is in another state other than the selected
state;
when it is determined that the other thread is in the other state, determining an
amount of time that the other thread is in the other state; and
15 calculating a percent of the portion of the measuring period that constitutes the
amount of time that the other thread is in the other state.

9. The method of claim 7, further comprising the steps of:

- determining, during the portion of the measuring period, whether another thread
other than the selected thread is in the selected state;
20 when it is determined that the other thread is in the selected state, determining an
amount of time that the other thread is in the selected state; and
calculating a percent of the portion of the measuring period that constitutes the
amount of time that the other thread is in the selected state.

11. A method in a data processing system having a program with a plurality of threads having a plurality of states, the method comprising the steps of:

running the program and determining the state of each thread during a measuring period, wherein the measuring period comprises a plurality of time intervals;

receiving user input indicating a selected one of the plurality of states;

receiving user input indicating a selected one of the plurality of threads;

determining a portion of the measuring period during which the selected thread is in the selected state;

determining, during the portion of the measuring period, whether another thread other than the selected thread is in the selected state; and

when it is determined that the other thread is in the selected state, determining an amount of time that the other thread is in the selected state.

12. The method of claim 11, further comprising the step of calculating a percent of the portion of the measuring period that constitutes the amount of time that the other thread is in the selected state.

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FOOTNOTES

13. A method in a data processing system having a program with a plurality of threads having a plurality of states, wherein the program executes during a measuring period and the measuring period comprises a plurality of time intervals, the method comprising the steps of:

- 5 receiving user input indicating one of the plurality of states to anchor;
- receiving user input indicating a selected one of the plurality of threads;
- determining a portion of the measuring period during which the selected thread is
in the anchored state;
- determining, during the portion of the measuring period, whether another thread
10 other than the selected thread is in the anchored state; and
- when it is determined that the other thread is in the anchored state, determining
an amount of time that the other thread is in the anchored state.

- 14. The method of claim 13, further comprising the step of calculating a
percent of the portion of the measuring period that constitutes the amount of time that the
15 other thread is in the anchored state.

21. A method in a data processing system having a program with a plurality of threads having a plurality of states, wherein the program executes during a measuring period and the measuring period comprises a plurality of time intervals, the method comprising the steps of:

- 5 receiving user input indicating a selected one of the plurality of states; and
determining a portion of the measuring period during which any of the plurality of threads is in the selected state.

22. The method of claim 21, further comprising the steps of:
determining, during the portion of the measuring period, whether a selected one
10 of the plurality of threads is in another state other than the selected state;
when it is determined that the selected thread is in the other state, determining an
amount of time that the selected thread is in the other state; and
calculating a percent of the portion of the measuring period that constitutes the
amount of time that the selected thread is in the other state.

23. The method of claim 21, further comprising the steps of:
determining, during the portion of the measuring period, whether a selected one
15 of the plurality of threads is in the selected state;
when it is determined that the selected thread is in the selected state, determining
an amount of time that the selected thread is in the selected state; and
20 calculating a percent of the portion of the measuring period that constitutes the
amount of time that the selected thread is in the selected state.

25. A method in a data processing system having a program with a plurality of threads having a plurality of states, the method comprising the steps of:

running the program and determining the state of each thread during a measuring period, wherein the measuring period comprises a plurality of time intervals;

receiving user input indicating a selected one of the plurality of states;

determining a portion of the measuring period during which any of the plurality of threads is in the selected state;

determining, during the portion of the measuring period, whether a selected one of the plurality of threads is in the selected state; and

when it is determined that the selected thread is in the selected state, determining an amount of time that the selected thread is in the selected state.

26. The method of claim 25, further comprising the step of calculating a percent of the portion of the measuring period that constitutes the amount of time that the selected thread is in the selected state.

27. A method in a data processing system having a program with a plurality of threads having a plurality of states, wherein the program executes during a measuring period and the measuring period comprises a plurality of time intervals, the method comprising the steps of:

- 5 receiving user input indicating one of the plurality of states to anchor;
- determining a portion of the measuring period during which any of the plurality of threads is in the anchored state;
- determining, during the portion of the measuring period, whether a selected one of the plurality of threads is in the anchored state; and
- 10 when it is determined that the selected thread is in the anchored state, determining an amount of time that the selected thread is in the anchored state.

28. The method of claim 27, further comprising the step of calculating a percent of the portion of the measuring period that constitutes the amount of time that the
- 15 selected thread is in the anchored state.

29. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having a program with a plurality of threads having a plurality of states, the method comprising the steps of:

5 running the program and determining the state of each thread during a measuring period, wherein the measuring period comprises a plurality of time intervals;

receiving user input indicating a selected one of the plurality of states;

receiving user input indicating a selected one of the plurality of threads;

10 determining a portion of the measuring period during which the selected thread is in the selected state;

determining, during the portion of the measuring period, whether another thread other than the selected thread is in another state other than the selected state; and

15 when it is determined that the other thread is in the other state, determining an amount of time that the other thread is in the other state.

30. The computer-readable medium of claim 29, further comprising the step of calculating a percent of the portion of the measuring period that constitutes the amount of time that the other thread is in the other state.

20 31. The computer-readable medium of claim 29, further comprising the steps of:

determining, during the portion of the measuring period, whether the other thread is in the selected state;

when it is determined that the other thread is in the selected state, determining a

25 second amount of time that the other thread is in the selected state; and

calculating a percent of the portion of the measuring period that constitutes the second amount of time that the other thread is in the selected state.

32. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having a program with a plurality of threads having a plurality of states, wherein the program executes during a measuring period and the measuring period comprises a plurality of time intervals, the method comprising the steps of:

- receiving user input indicating one of the plurality of states to anchor;
- receiving user input indicating a selected one of the plurality of threads;
- determining a portion of the measuring period during which the selected thread is in the anchored state;
- determining, during the portion of the measuring period, whether another thread other than the selected thread is in another state other than the anchored state; and
- when it is determined that the other thread is in the other state, determining an amount of time that the other thread is in the other state.

33. The computer-readable medium of claim 32, further comprising the step of calculating a percent of the portion of the measuring period that constitutes the amount of time that the other thread is in the other state.

34. The computer-readable medium of claim 32, further comprising the steps of:

- determining, during the portion of the measuring period, whether the other thread is in the anchored state;
- when it is determined that the other thread is in the anchored state, determining a second amount of time that the other thread is in the anchored state; and
- calculating a percent of the portion of the measuring period that constitutes the second amount of time that the other thread is in the anchored state.

35. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having a program with a plurality of threads having a plurality of states, wherein the program executes during a measuring period and the measuring period comprises a plurality of time intervals, the method comprising the steps of:

receiving user input indicating a selected one of the plurality of states;
receiving user input indicating a selected one of the plurality of threads; and
determining a portion of the measuring period during which the selected thread is in the selected state.

36. The computer-readable medium of claim 35, further comprising the steps of:

determining, during the portion of the measuring period, whether another thread other than the selected thread is in another state other than the selected state;

when it is determined that the other thread is in the other state, determining an amount of time that the other thread is in the other state; and
calculating a percent of the portion of the measuring period that constitutes the amount of time that the other thread is in the other state.

37. The computer-readable medium of claim 35, further comprising the steps of:

determining, during the portion of the measuring period, whether another thread other than the selected thread is in the selected state;

when it is determined that the other thread is in the selected state, determining an amount of time that the other thread is in the selected state; and

calculating a percent of the portion of the measuring period that constitutes the amount of time that the other thread is in the selected state.

38. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having a program with a plurality of states, wherein the program executes via a plurality of paths during a measuring period, the method comprising the steps of:

- 5 receiving user input indicating a selected one of the plurality of states;
receiving user input indicating a selected one of the plurality of paths of
execution; and
determining a portion of the measuring period during which the selected path of
execution is in the selected state.

39. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having a program with a plurality of threads having a plurality of states, the method comprising the steps of:

- 5 running the program and determining the state of each thread during a measuring period, wherein the measuring period comprises a plurality of time intervals;
- receiving user input indicating a selected one of the plurality of states;
- receiving user input indicating a selected one of the plurality of threads;
- 10 determining a portion of the measuring period during which the selected thread is in the selected state;
- determining, during the portion of the measuring period, whether another thread other than the selected thread is in the selected state; and
- when it is determined that the other thread is in the selected state, determining an
- 15 amount of time that the other thread is in the selected state.

40. The computer-readable medium of claim 39, further comprising the step of calculating a percent of the portion of the measuring period that constitutes the amount of time that the other thread is in the selected state.

41. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having a program with a plurality of threads having a plurality of states, wherein the program executes during a measuring period and the measuring period comprises a plurality of
5 time intervals, the method comprising the steps of:

receiving user input indicating one of the plurality of states to anchor;
receiving user input indicating a selected one of the plurality of threads;
determining a portion of the measuring period during which the selected thread is
in the anchored state;
10 determining, during the portion of the measuring period, whether another thread
other than the selected thread is in the anchored state; and
when it is determined that the other thread is in the anchored state, determining
an amount of time that the other thread is in the anchored state.

42. The computer-readable medium of claim 41, further comprising the step
15 of calculating a percent of the portion of the measuring period that constitutes the
amount of time that the other thread is in the anchored state.

43. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having a program with a plurality of threads having a plurality of states, the method comprising the steps of:

- 5 running the program and determining the state of each thread during a measuring period, wherein the measuring period comprises a plurality of time intervals;
- receiving user input indicating a selected one of the plurality of states;
- determining a portion of the measuring period during which any of the plurality
- 10 of threads is in the selected state;
- determining, during the portion of the measuring period, whether a selected one of the plurality of threads is in another state other than the selected state;
- and
- when it is determined that the selected thread is in the other state, determining an
- 15 amount of time that the selected thread is in the other state.

44. The computer-readable medium of claim 43, further comprising the step of calculating a percent of the portion of the measuring period that constitutes the amount of time that the selected thread is in the other state.

45. The computer-readable medium of claim 43, further comprising the steps
- 20 of:
- determining, during the portion of the measuring period, whether the selected thread is in the selected state;
- when it is determined that the selected thread is in the selected state, determining a second amount of time that the selected thread is in the selected state;
- 25 and
- calculating a percent of the portion of the measuring period that constitutes the second amount of time that the selected thread is in the selected state.

46. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having a program with a plurality of threads having a plurality of states, wherein the program executes during a measuring period and the measuring period comprises a plurality of time intervals, the method comprising the steps of:

receiving user input indicating one of the plurality of states to anchor;
determining a portion of the measuring period during which any of the plurality of threads is in the anchored state;
determining, during the portion of the measuring period, whether a selected one of the plurality of threads is in another state other than the anchored state;
and
when it is determined that the selected thread is in the other state, determining an amount of time that the selected thread is in the other state.

47. The computer-readable medium of claim 46, further comprising the step of calculating a percent of the portion of the measuring period that constitutes the amount of time that the selected thread is in the other state.

48. The computer-readable medium of claim 46, further comprising the steps of:
determining, during the portion of the measuring period, whether the selected thread is in the anchored state;
when it is determined that the selected thread is in the anchored state, determining a second amount of time that the selected thread is in the anchored state; and
calculating a percent of the portion of the measuring period that constitutes the second amount of time that the selected thread is in the anchored state.

49. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having a program with a plurality of threads having a plurality of states, wherein the program executes during a measuring period and the measuring period comprises a plurality of time intervals, the method comprising the steps of:

receiving user input indicating a selected one of the plurality of states; and
determining a portion of the measuring period during which any of the plurality of threads is in the selected state.

50. The computer-readable medium of claim 49, further comprising the steps of:

determining, during the portion of the measuring period, whether a selected one of the plurality of threads is in another state other than the selected state; when it is determined that the selected thread is in the other state, determining an amount of time that the selected thread is in the other state; and
calculating a percent of the portion of the measuring period that constitutes the amount of time that the selected thread is in the other state.

51. The computer-readable medium of claim 49, further comprising the steps of:

determining, during the portion of the measuring period, whether a selected one of the plurality of threads is in the selected state; when it is determined that the selected thread is in the selected state, determining an amount of time that the selected thread is in the selected state; and
calculating a percent of the portion of the measuring period that constitutes the amount of time that the selected thread is in the selected state.

53. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having a program with a plurality of threads having a plurality of states, the method comprising the steps of:

- 5 running the program and determining the state of each thread during a measuring period, wherein the measuring period comprises a plurality of time intervals;
- receiving user input indicating a selected one of the plurality of states;
- determining a portion of the measuring period during which any of the plurality
- 10 of threads is in the selected state;
- determining, during the portion of the measuring period, whether a selected one of the plurality of threads is in the selected state; and
- when it is determined that the selected thread is in the selected state, determining an amount of time that the selected thread is in the selected state.

- 15 54. The computer-readable medium of claim 53, further comprising the step of calculating a percent of the portion of the measuring period that constitutes the amount of time that the selected thread is in the selected state.

55. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having a program with a plurality of threads having a plurality of states, wherein the program executes during a measuring period and the measuring period comprises a plurality of time intervals, the method comprising the steps of:

5 receiving user input indicating one of the plurality of states to anchor;
determining a portion of the measuring period during which any of the plurality of threads is in the anchored state;
determining, during the portion of the measuring period, whether a selected one
10 of the plurality of threads is in the anchored state; and
when it is determined that the selected thread is in the anchored state,
determining an amount of time that the selected thread is in the anchored state.

56. The computer-readable medium of claim 55, further comprising the step
15 of calculating a percent of the portion of the measuring period that constitutes the amount of time that the selected thread is in the anchored state.

57. A data processing system comprising:

a memory device further comprising

a target program with a plurality of threads having a plurality of states,
wherein the target program executes during a measuring period
and the measuring period comprises a plurality of time intervals;
and

a monitoring program that receives user input indicating one of the
plurality of states to anchor, that receives user input indicating a
selected one of the plurality of threads, that determines a portion
of the measuring period during which the selected thread is in the
anchored state, that determines, during the portion of the
measuring period, whether another thread other than the selected
thread is in another state other than the anchored state, and when it
is determined that the other thread is in the other state, the
monitoring program determines an amount of time that the other
thread is in the other state; and

a processor for running the target program and the monitoring program.

58. The data processing system of claim 57, wherein the monitoring program
further calculates a percent of the portion of the measuring period that constitutes the
amount of time that the other thread is in the other state.

59. The data processing system of claim 57, wherein the monitoring program
further determines, during the portion of the measuring period, whether the other thread
is in the anchored state, when it is determined that the other thread is in the anchored
state, the monitoring program determines a second amount of time that the other thread is
in the anchored state, and calculates a percent of the portion of the measuring period that
constitutes the second amount of time that the other thread is in the anchored state.

60. A data processing system comprising:

a memory device further comprising:

a target program with a plurality of threads having a plurality of states,
wherein the target program executes during a measuring period
and the measuring period comprises a plurality of time intervals;
and

a monitoring program that receives user input indicating a selected one of
the plurality of states, that receives user input indicating a selected
one of the plurality of threads, and that determines a portion of the
measuring period during which the selected thread is in the
selected state; and

a processor for running the target program and the monitoring program.

61. The data processing system of claim 60, wherein the monitoring program
further determines, during the portion of the measuring period, whether another thread
other than the selected thread is in another state other than the selected state, when it is
determined that the other thread is in the other state, the monitoring program determines
an amount of time that the other thread is in the other state, and calculates a percent of
the portion of the measuring period that constitutes the amount of time that the other
thread is in the other state.

62. The data processing system of claim 60, wherein the monitoring program
further determines, during the portion of the measuring period, whether another thread
other than the selected thread is in the selected state, when it is determined that the other
thread is in the selected state, the monitoring program determines an amount of time that
the other thread is in the selected state, and calculates a percent of the portion of the
measuring period that constitutes the amount of time that the other thread is in the
selected state.

63. A data processing system comprising:
a memory device further comprising:

a target program with a plurality of threads having a plurality of states,
wherein the target program executes during a measuring period
and the measuring period comprises a plurality of time intervals;
and

a monitoring program that receives user input indicating one of the
plurality of states to anchor, that receives user input indicating a
selected one of the plurality of threads, that determines a portion
of the measuring period during which the selected thread is in the
anchored state, that determines, during the portion of the
measuring period, whether another thread other than the selected
thread is in the anchored state, and when it is determined that the
other thread is in the anchored state, the monitoring program
determines an amount of time that the other thread is in the
anchored state; and

a processor for running the target program and the monitoring program.

64. The data processing system of claim 63, wherein the monitoring program
further calculates a percent of the portion of the measuring period that constitutes the
amount of time that the other thread is in the anchored state.

65. A data processing system comprising:

a memory device further comprising:

a target program with a plurality of threads having a plurality of states,
wherein the target program executes during a measuring period
and the measuring period comprises a plurality of time intervals;
and

a monitoring program that receives user input indicating one of the
plurality of states to anchor, that determines a portion of the
measuring period during which any of the plurality of threads is in
the anchored state, that determines, during the portion of the
measuring period, whether a selected one of the plurality of
threads is in another state other than the anchored state, and when
it is determined that the selected thread is in the other state, the
monitoring program determines an amount of time that the
selected thread is in the other state; and

a processor for running the target program and the monitoring program.

66. The data processing system of claim 65, wherein the monitoring program
further calculates a percent of the portion of the measuring period that constitutes the
amount of time that the selected thread is in the other state.

67. The data processing system of claim 65, wherein the monitoring program
further the monitoring program determines, during the portion of the measuring period,
whether the selected thread is in the anchored state, when it is determined that the
selected thread is in the anchored state, the monitoring program determines a second
amount of time that the selected thread is in the anchored state, and calculates a percent
of the portion of the measuring period that constitutes the second amount of time that the
selected thread is in the anchored state.

68. A data processing system comprising:

a memory device further comprising:

a target program with a plurality of threads having a plurality of states,
wherein the target program executes during a measuring period
and the measuring period comprises a plurality of time intervals;
and

a monitoring program that receives user input indicating a selected one of
the plurality of states, and that determines a portion of the
measuring period during which any of the plurality of threads is in
the selected state; and

a processor for running the target program and the monitoring program.

69. The data processing system of claim 68, wherein the monitoring program
further determines, during the portion of the measuring period, whether a selected one of
the plurality of threads is in another state other than the selected state, when it is
determined that the selected thread is in the other state, the monitoring program
determines an amount of time that the selected thread is in the other state, and calculates
a percent of the portion of the measuring period that constitutes the amount of time that
the selected thread is in the other state.

70. The data processing system of claim 68, wherein the monitoring program
further determines, during the portion of the measuring period, whether a selected one of
the plurality of threads is in the selected state, when it is determined that the selected
thread is in the selected state, the monitoring program determines an amount of time that
the selected thread is in the selected state, and calculates a percent of the portion of the
measuring period that constitutes the amount of time that the selected thread is in the
selected state.

71. A data processing system comprising:

a memory device further comprising:

a target program with a plurality of threads having a plurality of states,
wherein the target program executes during a measuring period
and the measuring period comprises a plurality of time intervals;
and

a monitoring program that receives user input indicating one of the
plurality of states to anchor, that determines a portion of the
measuring period during which any of the plurality of threads is in
the anchored state, that determines, during the portion of the
measuring period, whether a selected one of the plurality of
threads is in the anchored state, and when it is determined that the
selected thread is in the anchored state, the monitoring program
determines an amount of time that the selected thread is in the
anchored state; and

a processor for running the target program and the monitoring program.

72. The data processing system of claim 71, wherein the monitoring program
further calculates a percent of the portion of the measuring period that constitutes the
amount of time that the selected thread is in the anchored state.

73. A system having a program with a plurality of states, wherein the program executes via a plurality of paths during a measuring period, the system comprising:

means for receiving user input indicating a selected one of the plurality of states;

means for receiving user input indicating a selected one of the plurality of paths of execution; and

means for determining a portion of the measuring period during which the selected path of execution is in the selected state.

means for determining a portion of the measuring period during which the selected path of execution is in the selected state.

selected path of execution is in the selected state.